

The 80 Percent Challenge:

A Survey of Climate Change Opinion and Action in Massachusetts

EXECUTIVE SUMMARY

The 2008 Global Warming Solutions Act set the ambitious goal of reducing greenhouse gas emissions 80 percent by the year 2050. With this groundbreaking legislation, the state's elected leaders put Massachusetts on the leading edge of American climate change policy.

Changes in federal regulations, combined with efforts to implement low- and no-cost measures, place the state on track to meet an interim goal of a 25 percent reduction in greenhouse gas emissions by 2020. But cutting emissions further will become more difficult as we exhaust relatively simple solutions.¹

Much of the progress to date in Massachusetts has been driven by environmental leaders. Achieving the momentum needed to meet the 80 percent reduction target will require active support from a broad coalition of residents, businesses, and the public sector. To develop this level of engagement, the Commonwealth must build what we call a "culture of climate protection."

Creating this culture is essential, as environmental behavior is often driven by social norms. People act when they see others making an effort. This is especially true when acting requires sacrifices that might not provide immediate individual benefit.² Equally important, culture has a strong influence on what people believe and perceive. If global warming is seen as a problem with solutions directly opposed to our culture, achieving progress will be an uphill battle. For real change to occur, the public must view climate protection as integrally tied to maintaining the Bay State's unique culture and values.³

To learn more about the Commonwealth's progress toward a culture of climate protection,

MassINC surveyed 1,311 adult residents across the state. The poll measured the strength of this culture along three dimensions:

1. Recognition of global warming as a problem and priority
2. Support for policy efforts to reduce greenhouse gas emissions
3. Action to reduce personal greenhouse gas emissions

The results suggest that the qualities of a climate protection culture are taking hold in Massachusetts to varying degrees. While most residents still do not look at global warming as a high long-term priority, a majority sees it as a problem, supports policy efforts to curb greenhouse gas emissions, and takes steps as individuals to reduce their personal energy consumption.

Dimension 1: Recognition of global warming as a problem and priority

In a culture where climate protection is deeply ingrained, citizens recognize that global warming is both real and serious, and they make addressing it a long-term policy priority. Survey results show a majority of Massachusetts residents believe global warming is happening, but many discount the severity of the threat and few currently see global warming as a high policy priority for the state, even in the long term.

Most residents believe global warming is happening and caused by human activity. About three-quarters (77%) of respondents say global warming has "probably been happening," compared with just 17 percent who do not think the world's temperature has been going up slowly over the

past 100 years.⁵ Among those who believe global warming is occurring, 74 percent connect it, at least partially, to human activity, while 21 percent say it is due to natural changes in the environment. In total, about six in ten (59%) Massachusetts residents see global warming as both occurring and at least partially caused by human pollution.

About half (54%) of residents say the effects of global warming are noticeable, and another 4 percent think they will be detectable within a few years. But awareness that climate change is already a reality does not mean residents believe it is too late to work to curb global warming. Nearly three-quarters (72%) of Massachusetts residents disagree with the statement, “It’s too late to reduce global warming, we should focus instead on adapting to climate change.”

A majority of residents do not think global warming has very serious implications. Only 42 percent of Massachusetts residents say global warming will have very serious consequences for Massachusetts if left unaddressed. Even among those who view global warming as real and attributable to human activity, just over half (56%) think the problem will have very serious consequences, which leaves about four in ten (42%) global warming believers seeing the consequences for Massachusetts as less severe.

This divide along the seriousness factor is very important in understanding global warming opinion. Throughout this report, we refer to residents who believe global warming is real, caused by man, and very serious as the Convinced. With one-third of Massachusetts residents, this is the

KEY FINDINGS

- Three-quarters (77%) of Massachusetts residents believe global warming is occurring. Nearly 60 percent agree that it is both happening and at least partially the result of human activities.
- Younger residents (76% of the 18-29 age group) are significantly more likely to believe global warming is occurring and caused by humans than are older residents (43% of the 60+ age group).
- African-American (56%) and Latino residents (69%) are more likely than white residents (40%) to believe global warming will be a very serious problem if left unaddressed.
- A majority (57%) of Republicans say global warming is either not happening or is caused mostly by natural changes in the environment. This view is shared by just 22 percent of Democrats and 28 percent of independents.
- Three-quarters of state residents believe global warming is a “very serious” or “somewhat serious” problem for Massachusetts. However, when asked to name the biggest problem facing the state over the next two decades, only 2 percent mention global warming or any other issue related to the environment.
- Asked to choose from a list of long-term challenges before the state legislature, only one-third of survey respondents rate global warming as a high-priority issue. By contrast, 89 percent cite jobs and the economy, and 83 percent cite education, as high-priority long-term challenges.
- While most residents do not rank global warming as a top priority, they still want their state and local leaders to address the problem. Nearly half (47%) say the state should be doing “a lot” to deal with global warming, and few residents (6%) believe the state is already doing a lot.
- About three-quarters believe action to reduce global warming would either help the state’s economy (53%) or have no effect (23%). Only 16 percent think that taking steps

ES Table 1:

Long-term priorities for the Massachusetts legislature by global warming segment

PERCENT WHO SAY ISSUE IS A "HIGH" PRIORITY	OVERALL	CONVINCED	RECEPTIVE	DUBIOUS	DISMISSIVE
Jobs and the economy	89%	88%	89%	88%	93%
Education	83%	89%	88%	75%	72%
Health care	71%	76%	77%	68%	56%
Energy and fuel costs	57%	57%	54%	54%	64%
Taxes	49%	39%	42%	58%	67%
Global warming	32%	55%	28%	19%	8%

largest of the four global warming opinion segments presented. In contrast, residents who think global warming is real, caused by man, but less than very serious are termed the Receptive. They

are the second largest of the four segments at one-quarter of the Commonwealth's adult population (for more on segment definitions, see text box on page 9).

- to reduce global warming would hurt the state's economy. When economic growth and environmental protection conflict, 50 percent side with protecting the environment and 40 percent favor economic growth.
- Almost three-quarters (72%) of Massachusetts residents disagree with the statement "It's too late to reduce global warming, we should focus instead on adapting to climate change."
- A majority of residents support state action to reduce global warming as an economic development strategy: 59 percent agree with the statement "Massachusetts will excel in the competition for green economy jobs by taking the lead in fighting global warming."
- Residents set a high standard for themselves. Forty-five percent say that people in Massachusetts need to do "a lot" to respond to global warming. However, they give their neighbors a low grade: Only 4 percent believe residents are now meeting that standard.
- Massachusetts residents are not well-informed about the strategies the state has adopted. Only 14 percent have heard "a lot" about the Global Warming Solutions Act, and the same figure applies to the Regional Green House Gas Initiative.
- A large majority of residents are willing to pay significantly more for green energy. Eighty percent would pay one dollar more per month for renewable power; 60 percent would pay five dollars more.
- Residents are less supportive of increasing the gas tax to raise funds for transportation improvements. About half (47%) support raising the gas by 10 cents per gallon; 38 percent support a 20-cent increase.
- Many residents are taking personal action to conserve energy, such as moderating home heating usage. However, there is no relationship between belief in global warming and personal conservation. Belief in the reality and seriousness of global warming does not appear to be sufficient motivation to reduce energy consumption.

Residents of Massachusetts do not view global warming as a long-term policy priority. When asked to name the biggest problem facing the state over the next decade or two with an open-ended question, just 2 percent offer global warming or any other challenge related to the environment.

Even when probed about the problem directly, only about a third (32%) of residents rate global

warming as a high-priority long-term issue for the state legislature.⁶ In contrast, large majorities grade jobs and the economy (89%), education (83%), and health care (71%) as high priorities.

It is difficult to say for certain why residents do not rank global warming highly as a long-term policy priority, but the segments suggest muted concern is an important factor. About half (55%) of the Convinced say global warming should be a high long-term priority, compared with only about a quarter (28%) of the Receptive. Again, the defining difference between these two groups is the Convinced see the global warming threat as very serious if left unaddressed, while most of the Receptive (79%) see it as just somewhat serious.

It is essential to develop a better understanding of how people come to view global warming as very serious. As presented in the findings below, these residents are much more likely to support state and local policies to reduce greenhouse gas emissions.

Dimension 2: Support for policy efforts to reduce greenhouse gas emissions

While only a third of residents say global warming is a high long-term priority for Massachusetts, on the second dimension — support for efforts to reduce greenhouse gas emissions — survey results show more progress toward a culture of climate protection. A majority of residents support efforts to curb global warming, even when those policies require some financial sacrifice.

Massachusetts residents want everyone to work harder to find solutions. Most of the public believes that addressing global warming is a challenge each sector of society should work to address. More than half (56%) of Massachusetts residents think the federal government should be doing “a lot.” In each case, nearly half feel the same way about state government (47%), local

DEFINING A CULTURE OF CLIMATE PROTECTION

Recognizing global warming as a problem and priority is the first dimension of a culture of climate protection. Given the many different challenges societies face at any point in time, it may never surface as a high priority in relation to other issues of the day. But in a state where climate protection is deeply rooted in the culture, residents would recognize global warming as a serious problem and rate it as a high priority among other long-term issues.

The second dimension, support for policy efforts to curb global warming, measures how much action residents believe government should take to solve the global warming challenge. In a state with a culture of climate protection, citizens would support specific policies that reduce greenhouse gas emissions.

Acting as individuals to bring down personal greenhouse gas emissions (i.e., reducing our carbon footprints) is the third dimension of a culture of climate protection. Behavior change at the household level can lead to significant greenhouse gas reductions, and a culture of climate protection helps foster the social norms that motivate many individuals to act accordingly.

MassINC defined these three dimensions of a climate protection culture after a thorough review of the literature on environmental behavior. Public policies to reduce greenhouse emissions (Dimension 2), either through incentives or regulations, have the greatest potential to prevent the worst effects of global warming. But studies show that personal action (Dimension 3) can also have a meaningful impact. With little or no reduction in personal comfort, citizens could cut greenhouse gas emissions in the US by more than 7 percent annually by taking simple steps, such as properly inflating a car’s tires and always turning off the engine when parked.⁴

governments (45%), businesses (48%), and citizens (45%). In addition, about one-third of state residents say they support “some” action from each of these groups.

Residents do not believe that any of these sectors is currently fulfilling its obligation to meet the global warming challenge. Just 4 percent say citizens are doing “a lot” right now, followed by businesses (5%), the state (6%), local governments (7%), and the federal government (7%).⁷ These findings suggest that the public would generally favor each sector doing more than it does now.

Many residents support specific policies to reduce global warming, even when these policies require financial sacrifice. For example, survey

results show that most people in Massachusetts are willing to pay more for renewable energy. Eight in ten residents would spend one extra dollar per month on their electric bill for renewable energy; 69 percent would pay up to three dollars more. Even when asked about spending up to five dollars more per month, 60 percent say they are willing to do so.

Proposals to improve residential energy efficiency are also popular. Two-thirds of renters would pay more rent each month in exchange for energy conservation improvements to their apartments. A slight majority (55%) of homeowners who heat with oil would be willing to pay an extra two cents per gallon (around \$20 annually)

THE SPECTRUM OF GLOBAL WARMING OPINION AND FOUR KEY SEGMENTS

To describe opinions about global warming in ways that provide meaningful distinctions, this report presents four resident groupings, or segments, which are based on belief in global warming and its implications. This segmentation helps highlight areas where knowledge of global warming and its consequences is associated with the dimensions of a culture of climate protection. For a full demographic profile of these segments, see Table 2 on page 19.

	SEGMENT 1: CONVINCED	SEGMENT 2: RECEPTIVE	SEGMENT 3: DUBIOUS	SEGMENT 4: DISMISSIVE
Happening	Yes	Yes	Yes or don't know	No
Cause	At least part human activity	At least part human activity	Natural causes or don't know	N/A
Seriousness	“Very”	Less than “very”	N/A	N/A

Convinced (33% of residents): Convinced residents say global warming is caused at least partially by human activity, and they see it as a very serious threat. They are the only group to view global warming as a high priority for state government and they are the most supportive of policy efforts to reduce greenhouse gas emissions.

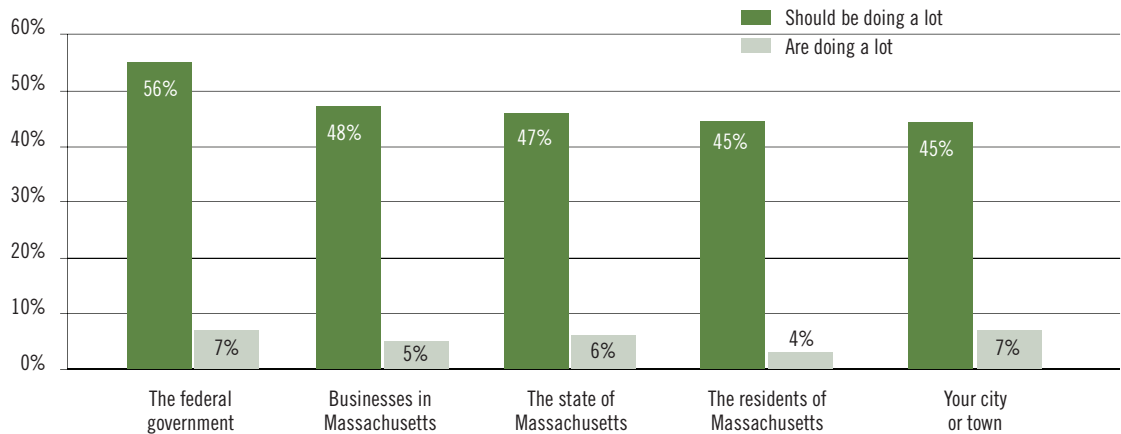
Receptive (26% of residents): Receptive residents think global warming is real and at least partially the result of human activity. However, they do not see it as a very serious threat, and they are much less supportive of policy efforts to reduce greenhouse gas emissions.

Dubious (24% of residents): Dubious residents are unsure that global warming is real or they believe it is happening for reasons other than human activity. They are closely divided on a number of policy proposals.

Dismissive (17% of residents): Dismissive residents do not believe global warming is occurring. They are not supportive of policy efforts to reduce greenhouse gas emissions. They are, however, just as likely as others to engage in personal energy conservation.

ES Figure 1:

Resident support for action vs. resident perception of current level of effort



to support free energy assessments and rebates to help reduce the upfront cost of efficiency improvements. In Massachusetts, these services are currently only available to homes heated with natural gas.

Even raising the gas tax gets support from nearly half of all residents. Forty-seven percent would favor a 10-cent-per-gallon increase, with proceeds going to improvements in the roads and public transportation (though support drops to 38 percent when respondents are asked about a 20-cent increase).

THE PUBLIC IS NOT WEIGHING ITS SUPPORT FOR CLIMATE CHANGE POLICY BASED ENTIRELY ON COST AND ABILITY TO PAY.

Perhaps the most important lesson in these findings is that the public is not weighing its support for climate change policy based entirely on cost and ability to pay.⁸ Whether residents are for or against a policy is only loosely related to how much income they have to cover additional costs. For the gas tax, support actually declines as family income rises after controlling for political affiliation. This income effect holds even when looking just at those who commute to work alone by car.⁹

The public endorses these policies even though their awareness of the larger strategy is low. Only 14 percent of residents have heard a lot about the landmark Global Warming Solutions Act or the state's participation in the Regional Greenhouse Gas Initiative. In Boston, just 3 percent of residents have heard a lot about the city's far-reaching climate action strategy, released in April 2010.

Research shows that people are more likely to act to improve environmental quality when they understand how their efforts contribute to a larger solution.¹⁰ Given the complexity of the challenge, and the trade-offs associated with the various proposals to curb greenhouse gas emissions, educating the public on the components of state and local strategies designed to respond to global warming could lead to greater support for these policies.

Residents who believe that global warming is a real and serious threat are more supportive of policy effort to reduce greenhouse gas emissions. Looking at the four policy proposals together provides a way to measure how eager residents are for state and local governments to take specific steps to reduce greenhouse gas emissions. Doing so shows that support for policy efforts varies by segment, as expected. Convinced residents support an average of 2.9 proposals, and Dismissive residents endorse just 1.5 of them. The Receptive

fall in the middle, supporting 2.5 policies. These results suggest that reaching residents who recognize the problem, but not its consequences, could lead to increased support for state and local action.¹¹

Dimension 3: Action to reduce personal greenhouse gas emissions

To gauge how much effort residents are making to reduce greenhouse gas emissions, the survey included a series of questions about personal action to conserve energy. While the results show that a significant share of the public is conscientious about reducing energy usage, the findings also reveal little connection between energy savings behavior and belief that global warming is a concern.

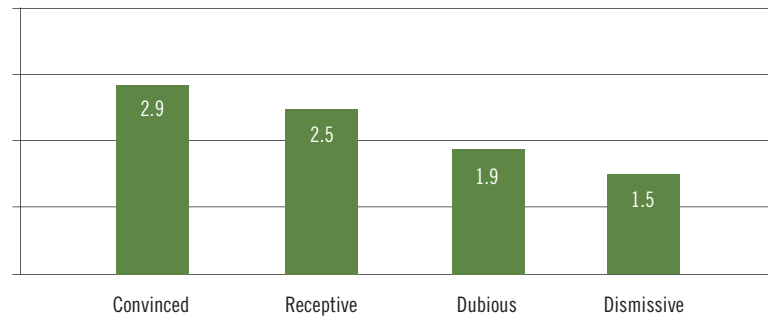
Many residents are already taking steps to reduce their energy usage. About half (52%) of residents say they take steps “very frequently” to use less energy. In terms of the five specific self-reported actions included in the survey, 53 percent say they always set their thermostats at or below 68 degrees in the winter; 48 percent always turn their engines off immediately when sitting in a parked car; 44 percent always wash all their clothes using the washer’s cold water setting; and 44 percent always check that their car tires are inflated properly.¹² Lowering air conditioning was the only uncommon action, with just one quarter (27%) of residents always setting the temperature at or above 76 degrees in the warmer months.

The survey also revealed that 44 percent of homeowners have had a home energy audit. When excluding those who say they live in new or already efficient homes, this figure rises to 52 percent.

Residents are taking steps to conserve energy regardless of their belief in global warming. Support for policy efforts in response to global warming is driven by belief in global warming as a very serious threat. But there does not appear to be a

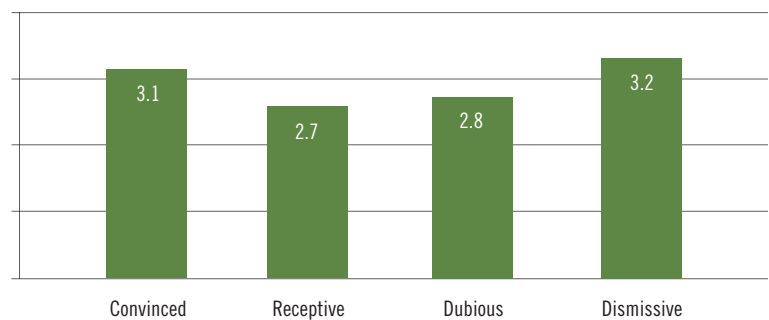
ES Figure 2:

Average number of policies supported by global warming segment



ES Figure 3:

Average number of conservation actions taken by global warming segment



similar link between an understanding of global warming and conservation behavior.

Convinced residents are more likely than the other segments to say that they take steps “very frequently” to reduce their energy usage. But when asked specific questions about behavior, they report levels of action similar to other residents. In fact, the Dismissive say they “always” or “often” carry out an average of 3.2 of the five energy conservation actions; this is a slightly higher number than among the Convinced.¹³

The same pattern is also present with transportation. There is no indication that residents concerned about global warming make an extra effort to carpool, walk, or ride public transportation. Not only does this suggest global warming is not influencing transportation choices, it also means that residents who are aware of the global warming threat are not making decisions about where to live based on a community’s walkability

or public transportation services.¹⁴

Sharp differences between support for policy efforts and personal action are particularly apparent among younger residents. For example, nearly two-thirds (65%) of respondents ages 18 to 29 say they would support a 10-cent increase in the gas tax, significantly higher than residents in other age groups. But only a third of these young residents say they take steps very frequently to reduce their energy use, the lowest of any age group.¹⁵

Conservation behavior is difficult to explain.

The connection between energy savings and financial savings seems like the most obvious reason why some would conserve more than others. However, the data suggest those living in higher-income households actually engage in more energy savings activity, even after controlling for age, education, and homeownership status. This suggests simple economics is not the most important motivator. No group of variables collected in this survey can accurately predict self-reported conservation behavior.

These results are consistent with hundreds of studies attempting to explain environmental behavior. These studies show that the decisions

warming suggests many are feeling that others are not fully committed to reducing their carbon footprints. This belief likely presents a significant obstacle to encouraging higher levels of individual action.

Concluding Thoughts on Building a Culture of Climate Protection

This survey offers several lessons for leaders working to help Massachusetts meet its 80 percent greenhouse gas reduction goal. These include lessons about communicating the challenge, groups to target, and frameworks for evaluating progress.

Communicating the threat posed by climate change is a challenge scientists have struggled with for decades. These survey results show that on one level their message has been heard in Massachusetts. A majority of residents believe that global warming is real and the result of human activity. On another level, however, their message has not resonated as well. Only a third of residents believe global warming is happening due to human activities and think it will be a very serious problem for Massachusetts if it is not addressed.

While there are some significant differences, in many respects these Convinced residents look very similar to the overall population. The diversity within this group suggests the greater support they voice for state and local policy efforts to address global warming is driven by their appreciation for the seriousness of the problem, as opposed to other social and economic factors. If this is the case, a focus on increasing the understanding of the severity of the problem, particularly among Receptive residents, is one strategy that could help Massachusetts build a broader culture of climate protection.

Successfully increasing awareness of the threat posed by global warming will be difficult. These survey results show a direct relationship between education and a belief that global warming is real. But while more educated resi-

THERE IS NO INDICATION THAT RESIDENTS CONCERNED ABOUT GLOBAL WARMING MAKE AN EXTRA EFFORT TO CARPOOL, WALK, OR RIDE PUBLIC TRANSPORTATION.

people make with respect to the environment are complex. Favoring the environment is often only weakly associated with acting on its behalf. Even when people intend to act in ways favorable to the environment, they often fall short of their goals. This body of research, however, does suggest that important cultural forces, such as social and moral norms, are at work in influencing environmental decisions.¹⁶ The small number of Massachusetts residents who think other residents are currently doing a lot to reduce global

dents are more likely to think the earth is slowly warming, they are no more likely than others to think global warming is serious. This suggests cultural values may be impacting the way Massachusetts residents interpret the scientific consensus concerning global warming's potential consequences. Research nationally shows that when problems involve risk, people rely on their core values to judge whether the threat is truly dangerous. Those who favor individual freedom, a trait residents of Massachusetts trace back to the Commonwealth's founding principles, tend to discount risk.¹⁷

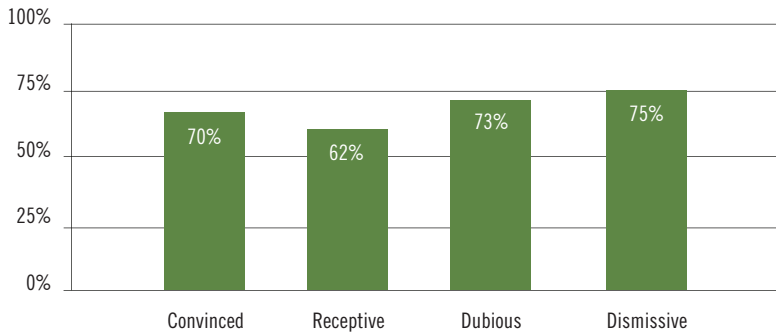
Communicating the problem of global warming as a threat can also trigger an emotional response. Research shows that residents overwhelmed by the challenge may simply attempt to evade it, particularly when they are not informed about how to solve the problem.¹⁸ For this reason, it is critical that state and local governments effectively communicate global warming strategies and the role residents have in helping Massachusetts meet its greenhouse gas reduction targets.

The difficulty involved in communicating the global warming challenge is not an argument for abandoning the attempt altogether and pursuing other messages leading to energy reduction. But to be sure, other frames are valuable. The survey shows that 84 percent of residents think developing renewable energy is critical to our national security, and nearly 60 percent of residents think Massachusetts will create green jobs by taking the lead in efforts to curb global warming.

This economic development frame is particularly powerful. Studies show that what matters most in winning engagement on global warming is whether people think efforts to reduce it will harm them personally and weaken the economy.¹⁹ A majority of residents (53%) think acting to curb global warming will help the Massachusetts economy; just 16 percent say the state's climate change efforts are detrimental to the economy. Massachusetts residents are clearly

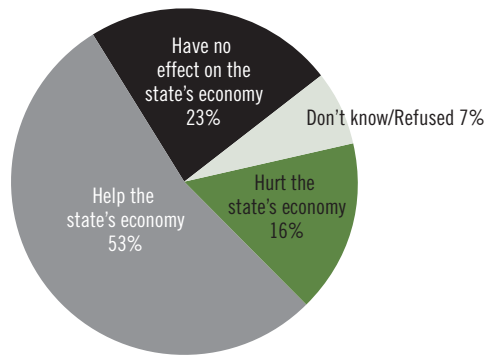
ES Figure 4:

Percent driving to work alone by global warming segment



ES Figure 5:

How residents view state efforts to fight global warming impacting the economy



inclined to think action to reduce global warming will lead to economic benefits to the state.

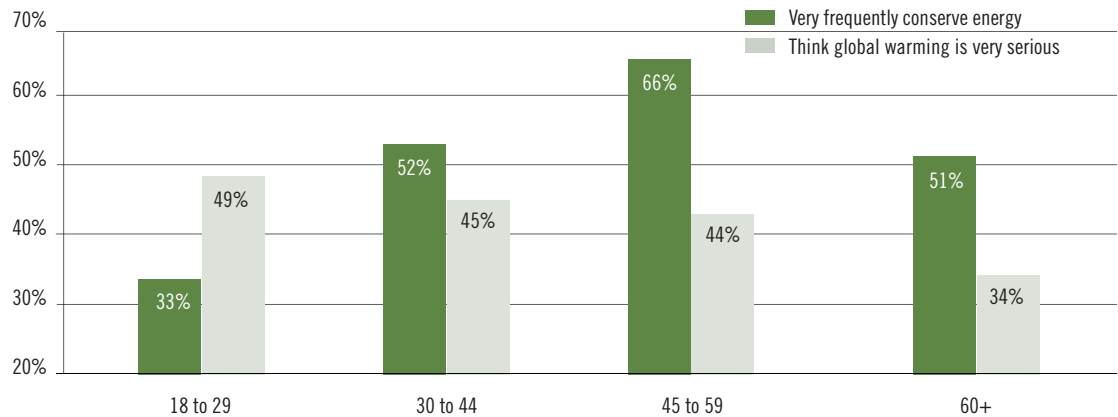
However, there is real risk that this message could also create fatigue around global warming as a priority for Massachusetts if the economic development benefits of green jobs are oversold. Similarly, interest in the national security angle could change dramatically based on shifting conditions in the Middle East or as nonrenewable domestic resources are discovered (e.g., natural gas captured through hydraulic fracturing).

For these reasons, the primary message must be centered around the challenge posed by global warming, a problem recognized by a majority of residents.

Toward this end, working to integrate climate protection into our cultural fabric seems like the most promising avenue toward building the sup-

ES Figure 6:

Energy conservation vs. global warming consequences



port and action required to meet the state’s 80 percent goal. Like love for the Red Sox passed down from one generation to the next, residents must connect beloved Cape Cod beaches and snowy Berkshire peaks to a culture they want to preserve for their children.

Developing this culture is particularly important in encouraging more individuals to take personal action. The survey results show a close connection between belief that global warming is real and serious and support for policy efforts. However, with personal energy conservation, the connection between belief and action is noticeably absent — as if to say, “I think *we* should act, but personally *I* am waiting for others to reduce their energy usage before I moderate mine.”

This gap between belief and action is particularly striking among the state’s youngest residents, who think global warming will be very serious if left unaddressed and want the state to address it but report very modest energy conservation effort as individuals. Perhaps this is simply a sign of the liberalism of youth. Studies nationally have found that young adults are prone to want the government to take more action than they are willing to take personally.²⁰

Reaching young residents is yet another challenge leaders must embrace. Students and young professionals are important generators of

culture, particularly in an age with so many new technologies that have the power to dramatically reshape society.

As the state works to build a culture of climate protection inclusive of all residents, it should use the findings provided in this survey as a benchmark. In addition to informing strategies to increase public engagement around this issue, a benchmarking effort could help communicate progress and reinforce the importance of building a broad culture of climate protection across the Commonwealth.

Leaders working to move the needle on this benchmark will certainly face challenges, but as these findings show, they have a significant foundation to build from. Many residents are aware of the severity of the problem. Even those who are not convinced the threat is very serious want state and local governments to find solutions to the problem. Although global warming is not rated as highly on the priority list as other issues, this does not indicate a lack of support for action. State and local officials who work effectively to build a culture of climate protection will be recognized by residents as effectively carrying out their responsibilities as leaders to tackle the full range of both immediate and long-term challenges that come before them.